In the Claims

1.   (Original) An adaptive system modeling method comprising:

selecting from a plurality of candidate features of a system a set of input features and a superset of the input features and other features by using a baseline significance signature;

generating a system model by using data corresponding to the selected input features set;

maintaining online data corresponding to the superset of the input features and other features collected from the system;

determining a new significance signature of the system by using the online superset data to perform a discriminant analysis of the candidate features; and

detecting an evolutionary change in the system by comparing the new significance signature and the baseline significance signature.

2.   (Original) The method of claim 1 further comprising selecting new input features by using the new significance signature.

3.   (Original) An adaptive system modeling method comprising:

determining a baseline significance signature of current behavior of a system by performing a discriminant analysis;

selecting from a plurality of candidate features a set of input features and a superset of the input features and other features by using the baseline significance signature;

generating a system model by using data corresponding to the selected input features set; and

maintaining online data corresponding to the superset of the input features and other features collected from the system.

4.   (Original) The method of claim 3 further comprising:

evaluating an accuracy of predictions by the system model based on additional input features data;

determining a new significance signature of the system by performing another discriminant analysis of the candidate features, if the accuracy of the system model predictions is below a predetermined accuracy level; and

selecting new input features by using the new significance signature.

5.   (Original) The method of claim 4, wherein the additional input features data is obtained from the online collection of data.

6.   (Original) An adaptive system modeling method comprising:

determining a baseline significance signature of current behavior of a system by using a decision tree methodology to perform a discriminant analysis;

selecting from a plurality of candidate features of a system a set of input features by using the baseline significance signature; and

generating a system model by using data corresponding to the selected input features set.

7.   (Previously presented) A program storage device readable by a machine, tangibly embodying a program of instructions executable by the machine, the program instructions when executed by the machine operable to:

select from a plurality of candidate features of a system a set of input features and a superset of the input features and other features by using a baseline significance signature;

generate a system model by using data corresponding to the selected input features set;

maintain online data corresponding to the superset of the input features and other features collected from the system;

determine a new significance signature of the system by using the online superset data to perform a discriminant analysis of the candidate features; and

detect an evolutionary change in the system by comparing the new significance signature and the baseline significance signature.

8.   (Previously presented) A program storage device readable by a machine, tangibly embodying a program of instructions executable by the machine, the program of instructions when executed by the machine operable to:

determine a baseline significance signature of current behavior of a system by performing a discriminant analysis;

select from a plurality of candidate features a set of input features and a superset of the input features and other features by using the baseline significance signature;

generate a system model by using data corresponding to the selected input features set; and

maintain online data corresponding to the superset of the input features and other features collected from the system.

9.   (Previously presented) A program storage device readable by a machine, tangibly embodying a program of instructions executable by the machine, the program of instructions when executed by the machine operable to:

determine a baseline significance signature of current behavior of a system by using a decision tree methodology to perform a discriminant analysis;

select from a plurality of candidate features of a system a set of input features by using the baseline significance signature; and

generate a system model by using data corresponding to the selected input features set.

10.   (Previously presented) A computer system, comprising:

a program storage device readable by the computer system, tangibly embodying a program of instructions; and

a processor operable to execute the program of instructions to:

select from a plurality of candidate features of a system a set of input features and a superset of the input features and other features by using a baseline significance signature;

generate a system model by using data corresponding to the selected input features set;

maintain online data corresponding to the superset of the input features and other features collected from the system;

determine a new significance signature of the system by using the online superset data to perform a discriminant analysis of the candidate features; and

detect an evolutionary change in the system by comparing the new significance signature and the baseline significance signature.

11.   (Currently amended) A computer system, comprising:

a program storage device readable by the computer system, tangibly embodying a program of instructions; and

a processor operable to execute the program of ~~instrutions~~ instructions to:

determine a baseline significance signature of current behavior of a system by performing a discriminant analysis;

select from a plurality of candidate features a set of input features and a superset of the input features and other features by using the baseline significance signature;

generate a system model by using data corresponding to the selected input features set; and

maintain online data corresponding to the superset of the input features and other features collected from the system.

12.   (Previously presented) A computer system, comprising:

a program storage device readable by the computer system, tangibly embodying a program of instructions; and

a processor operable to execute the program of instructions to:

determine a baseline significance signature of current behavior of a system by using a decision tree methodology to perform a discriminant analysis;

select from a plurality of candidate features of a system a set of input features by using the baseline significance signature; and

generate a system model by using data corresponding to the selected input features set.

13.-15. (Canceled)